

(2) Any water/waste leakage onto EWIS components will not create a hazardous condition.

(i) EWIS must be designed and installed with adequate physical separation between the EWIS and flight or other mechanical control systems cables and associated system components, so that:

(1) Chafing, jamming, or other interference are prevented.

(2) An EWIS component failure will not create a hazardous condition.

(3) Failure of any flight or other mechanical control systems cables or systems components will not damage the EWIS and create a hazardous condition.

(j) EWIS must be designed and installed with adequate physical separation between the EWIS components and heated equipment, hot air ducts, and lines, so that:

(1) An EWIS component failure will not create a hazardous condition.

(2) Any hot air leakage or heat generated onto EWIS components will not create a hazardous condition.

(k) For systems for which redundancy is required, by certification rules, by operating rules, or as a result of the assessment required by § 25.1709, EWIS components associated with those systems must be designed and installed with adequate physical separation.

(1) Each EWIS must be designed and installed so there is adequate physical separation between it and other aircraft components and aircraft structure, and so that the EWIS is protected from sharp edges and corners, to minimize potential for abrasion/chafing, vibration damage, and other types of mechanical damage.

§ 25.1709 System safety: EWIS.

Each EWIS must be designed and installed so that:

(a) Each catastrophic failure condition—

(1) Is extremely improbable; and

(2) Does not result from a single failure.

(b) Each hazardous failure condition is extremely remote.

§ 25.1711 Component identification: EWIS.

(a) EWIS components must be labeled or otherwise identified using a consistent method that facilitates identification of the EWIS component, its function, and its design limitations, if any.

(b) For systems for which redundancy is required, by certification rules, by operating rules, or as a result of the assessment required by § 25.1709, EWIS components associated with those systems must be specifically identified with component part number, function, and separation requirement for bundles.

(1) The identification must be placed along the wire, cable, or wire bundle at appropriate intervals and in areas of the airplane where it is readily visible to maintenance, repair, or alteration personnel.

(2) If an EWIS component cannot be marked physically, then other means of identification must be provided.

(c) The identifying markings required by paragraphs (a) and (b) of this section must remain legible throughout the expected service life of the EWIS component.

(d) The means used for identifying each EWIS component as required by this section must not have an adverse effect on the performance of that component throughout its expected service life.

(e) Identification for EWIS modifications to the type design must be consistent with the identification scheme of the original type design.

§ 25.1713 Fire protection: EWIS.

(a) All EWIS components must meet the applicable fire and smoke protection requirements of § 25.831(c) of this part.

(b) EWIS components that are located in designated fire zones and are used during emergency procedures must be fire resistant.

(c) Insulation on electrical wire and electrical cable, and materials used to provide additional protection for the wire and cable, installed in any area of the airplane, must be self-extinguishing when tested in accordance with the applicable portions of appendix F, part I, of 14 CFR part 25.